

Abstract of the Disclosure

Methods for the preparation of multilayered resists are described. To efficiently pattern large contiguous areas rapidly, a procedure has been developed using spot-size modulation of the focused laser beam to more efficiently pattern interior portions. Critical portions at the perimeter are patterned at high resolutions. The spot-size is progressively increased towards the interior allowing a controlled transition to coarser spot-sizes without impacting the exposure dose in critical portions. Patterning times are significantly reduced since in effect shells are patterned. An algorithm is defined to subdivide a layer into different zones, determine the appropriate focused spot-sizes used for each zone, and define the laser scan trace within a zone to enable efficient patterning of broad areas in positive tone resists.

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